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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,828	08/06/2007	Pauli Laine	884A.0149.U1 (US)	4400
29683	7590	05/21/2009		
HARRINGTON & SMITH, PC 4 RESEARCH DRIVE, Suite 202 SHELTON, CT 06484-6212			EXAMINER WARREN, DAVID S	
			ART UNIT 2837	PAPER NUMBER
			MAIL DATE 05/21/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,828	<b>Applicant(s)</b> LAINE ET AL.	
	<b>Examiner</b> DAVID S. WARREN	<b>Art Unit</b> 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) 32-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-16, 18-31 and 37-39 is/are rejected.
- 7) ☒ Claim(s) 12 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/6/07, 9/6/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I in the reply filed on 23 February 2009 is acknowledged. The traversal is on the ground(s) that the "search and examination of all claims in a single application would not present a serious burden on the Examiner." This is not found persuasive because these claims are drawn to limitations that include heart rate and displaying and highlighting a node. These limitations would require an added search, this added search is deemed to be an added burden. Furthermore, these Groups are clearly drawn to different inventions. The Applicant has requested that claim 32 be included in Group I. This is an obvious typographical error and could have easily been resolved by telephone.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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Claim 21 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 21 is drawn to a computer program per se. In accordance with MPEP 2106 IV (B)(1)(a): "[T]he computer program itself is not a process and Office personnel should treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as nonstatutory functional descriptive material. [Emphasis added].

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 11, 13 – 31, 37, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima (5,138,928) in view of Nugent (7,398,259).

Regarding claims 1 and 21, Nakajima discloses the use of creating a neuronal network comprising a plurality of nodes arranged to integrate and fire (see Abstract; col. 9, first paragraph), associating the nodes with a musical instrument and creating a musical output (col. 3, lines 28 - 39, col. 5, lines 48 - 61). Nakajima's nodes are "basic units" (see col. 9, lines 54 - 56), see neurons in fig. 4, also see last sentence of the paragraph beginning at line 27 of col. 15. Nakajima does not teach the use of a mutually inhibiting neuronal network. Nugent discloses the use computational neural networks utilizing

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mutually inhibiting neuron states. It would have been obvious to one of ordinary skill to include the mutual inhibition of Nugent into the neural network system of Nakajima. The motivation would be to enhance network systems that perform multiple behaviors (e.g., to provide "winner-take-all" computations, or to select the strongest firing neuron).

Regarding claim 2, Nakajima discloses the use of a MIDI output, it is certainly within the scope of one of ordinary skill to associate groups (e.g., MIDI output from plural ports)

with different percussive groups. Regarding claim 3, the grouping of nodes is an obvious matter of design choice. Regarding claim 4, Nakajima shows bass drums, snare drums, etc. (see col. 15, lines 29 – 32; figs. 9A and 9B). Regarding claim 5,

associating MIDI outputs with instruments (indeed to any control) is well-known (this is also functionally equivalent to Nakajima's multiple "layers" - see col. 3, lines 40 - 62).

Regarding claims 6 and 8, level of excitation is synonymous with "threshold"

computations (see paragraph Bridging cols. 9 and 10). Regarding claim 7, see col. 7, lines 59 – 63. Regarding claim 9, see figs. 9A, 9B, and 13 ("excitation level" is

equivalent to velocity). Regarding claims 10 and 11, the programmable delay period is well-known within the neural network technology. Regarding claim 13, the

"predetermined pattern" is synonymous with Nakajima's "input patter" and the excitation during intervals is shown in figs. 9A, 9B, and 13. Regarding claims 14 – 16, the factor is functionally equivalent to Nakajima's weight (see calculation in col. 10, lines 10 – 32), and programmable is functionally equivalent to adjusting (col. 24, lines 43 – 45).

Regarding claims 18 – 20, user specification and/or display are deemed to be within the

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ability of one of ordinary skill in the art. Regarding claims 22 – 31 and 37 – 39 all limitations have been discussed supra.

### ***Allowable Subject Matter***

4. Claims 12 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not disclose calculating the excitation level based on previous intervals and whether the connection (to other nodes) is an activation connection or an inhibitory connection.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See Notice of References Cited (PTO form 892).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID S. WARREN whose telephone number is (571)272-2076. The examiner can normally be reached on M-F, 9:30 A.M. to 6:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on 571-272-2227. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dsw..

/David S. Warren/  
Primary Examiner, Art Unit 2837